Claim Amendments

1. (currently amended) An apparatus, comprising:

~~one or more~~ a light source~~s~~;

~~one or more~~ a long period Bragg gratings that ~~are~~ is optically coupled with the ~~one or more~~ light source~~s~~ via a first optical splice; and

~~one or more~~ an amplification fibers that ~~are~~ is optically coupled with the ~~one or more~~ long period Bragg grating~~s~~ via a second optical splice;

wherein ~~one or more of~~ the ~~one or more~~ light sources send~~s~~ one or more pump optical signals to ~~one or more of~~ the ~~one or more~~ long period Bragg gratings;

wherein the ~~one or more of the one or more~~ long period Bragg gratings transmit~~s~~ the one or more pump optical signals to ~~one or more of~~ the ~~one or more~~ amplification fibers;

wherein the ~~one or more of the one or more~~ amplification fibers absorb~~s~~ ~~one or more of~~ a subset of the one or more pump optical signals and emit~~s~~ one or more output signals;

wherein the ~~one or more of the one or more~~ long period Bragg gratings attenuate~~s~~ ~~one or more of~~ the one or more output signals.

2. (currently amended) The apparatus of claim 1, wherein the one or more pump optical signals comprise a substantially same first wavelength, wherein the one or more output signals comprise a substantially same second wavelength;

wherein the ~~one or more of the one or more~~ long period Bragg gratings comprises ~~one or more~~ a wavelength attenuation ranges that omits the substantially same first wavelength and comprises the substantially same second wavelength;

wherein the ~~one or more of the one or more~~ long period Bragg gratings transmits the one or more pump optical signals to the ~~one or more of the one or more~~ amplification fibers;

wherein the ~~one or more of the one or more~~ long period Bragg gratings attenuates the ~~one or more of the~~ one or more output signals.

3. (currently amended) The apparatus of claim 2, wherein the ~~one or more~~ wavelength attenuation ranges comprises a plurality of wavelength attenuation sub-ranges, wherein the plurality of wavelength attenuation sub-ranges comprise zero or more wavelength attenuation sub-ranges that overlap.

4. (currently amended) The apparatus of claim 1, wherein the ~~one or more~~ long period Bragg gratings comprises a first long period Bragg grating, the apparatus further comprising ~~and~~ a second long period Bragg grating~~, wherein the one or more of the one or more long period Bragg gratings comprise the first long period Bragg grating and omit the second long period Bragg grating~~;

wherein the first long period Bragg grating is optically coupled with a first side of the amplification fiber via a third optical splice, wherein the second long period Bragg grating is optically coupled with a second side of the amplification fiber via a fourth optical splice;

wherein the first long period Bragg grating attenuates the one or more ~~of the one or more~~ output signals;

wherein the ~~one or more of the one or more~~ amplification fibers receives the one or more pump optical signals and transmits one or more residual signals of the one or more pump optical signals to the second long period Bragg grating;

wherein the second long period Bragg grating attenuates ~~one or more of~~ the one or more residual signals.

5. (currently amended) The apparatus of claim 4, wherein the one or more output signals comprise one or more first output signals;

wherein the amplification fiber absorbs a subset of the one or more pump optical signals and emits the one or more first output signals toward the first long period Bragg grating and emits one or more second output signals toward the second long period Bragg grating;

~~wherein the one or more of the one or more amplification fibers direct the one or more first output signals toward the first long period Bragg grating and the one or more second output signals toward the second long period Bragg grating;~~

wherein the first long period Bragg grating attenuates the one or more first output signals;

wherein the second long period Bragg grating transmits the one or more second output signals to an optical component.

6. (currently amended) The apparatus of claim 5, wherein the one or more first output signals and one or more second output signals comprise a substantially same first wavelength, wherein the one or more pump optical signals and the one or more residual signals comprise a substantially same second wavelength;

wherein the first long period Bragg grating comprises:

a first cladding;

a first core surrounded by the first cladding, wherein the first core couples ~~one or more~~ a subset of the one or more first output signals to the first cladding to attenuate the ~~one or more of the~~ one or more first output signals; and

a first wavelength attenuation range that comprises the substantially same first wavelength and omits the substantially same second wavelength;

wherein the second long period Bragg grating comprises:

a second cladding;

a second core surrounded by the second cladding, wherein the second core couples ~~one or more~~ a subset of the one or more residual signals to the second cladding to attenuate the ~~one or more of the~~ one or more residual signals; and

a second wavelength attenuation range that omits the substantially same first wavelength and comprises the substantially same second wavelength.

7. (currently amended) The apparatus of claim 6, wherein the first long period Bragg grating attenuates the one or more first output signals to promote a reduction of backreflection of the one or more first output signals.

8. (currently amended) The apparatus of claim 7 in combination with the optical component, wherein the optical component receives the one or more second output signals from the second long period Bragg grating and returns ~~one or more~~ a subset of the one or more second output signals to the second long period Bragg grating;

wherein the second long period Bragg grating transmits the subset of the one or more second output signals through the amplification fiber to the first long period Bragg grating;

wherein the first long period Bragg grating attenuates the subset of the one or more second output signals to promotes a reduction of backreflection of the one or more second output signals ~~through attenuation of the one or more of the one or more second output signals~~.

9. (original) The apparatus of claim 5 in combination with the optical component, wherein the optical component comprises a fiber optic gyroscope.

10. (original) The apparatus of claim 9, wherein the fiber optic gyroscope comprises a scale factor linearity error;

wherein the second long period Bragg grating attenuates the one or more residual signals to promote a reduction of the scale factor linearity error of the fiber optic gyroscope.

11. (currently amended) The apparatus of claim [[4]] 5, wherein the one or more residual signals comprise one or more first residual signals, wherein the first optical component redirects the one or more second residual signals and the one or more second output signals back through the second long period Bragg grating, the apparatus further comprising:

a ~~first~~ second optical component optically coupled with the second long period Bragg grating;

wherein the second long period Bragg grating receives the one or more first residual signals and the second output signal from the first optical component, wherein the second long period Bragg grating attenuates ~~one or more of~~ the one or more first residual signals to create one or more second residual signals;

wherein the second long period Bragg grating ~~further~~ attenuates ~~one or more of~~ the one or more second residual signals and transmits the one or more second output signals towards a the second optical component.

12. (original) The apparatus of claim 11, further comprising:

an optical coupler that is coupled with the second long period Bragg grating; wherein the optical coupler directs the one or more second output signals to the second optical component.

13. (currently amended) The apparatus of claim 1, wherein the ~~one or more~~ light sources, the ~~one or more~~ long period Bragg gratings, and the ~~one or more~~ amplification fibers comprise a portion of a broadband fiber source.

14. (currently amended) The apparatus of claim 1, wherein the ~~one or more~~ amplification fibers comprises ~~one or more~~ an erbium-doped fibers.

15. (currently amended) The apparatus of claim 1, wherein the ~~one or more~~ light sources comprises ~~one or more~~ a pump diode lasers.

16. (currently amended) The apparatus of claim 1, wherein the ~~one or more~~ long period Bragg gratings ~~comprise a~~ is fusion-spliced ~~long period Bragg grating, wherein the fusion spliced long period Bragg grating is located between~~ to the ~~one or more~~ light sources and the ~~one or more~~ amplification fibers.

17. (currently amended) The apparatus of claim 1, wherein the ~~one or more of the one or more~~ long period Bragg gratings comprises a cladding and an optical core surrounded by the cladding;

wherein the optical core couples ~~the one or more~~ a subset of the one or more output signals to the cladding to attenuate the ~~one or more of the~~ one or more output signals.

18. (currently amended) The apparatus of claim 1, wherein the ~~one or more of the one or more~~ long period Bragg gratings promotes a reduction of backreflection of the ~~one or more of the~~ one or more output signals through attenuation of the ~~one or more of the~~ one or more output signals.

19. (currently amended) The apparatus of claim 18, wherein the ~~one or more of the one or more~~ light sources causes the backreflection of ~~the one or more of the~~ a subset of the one or more output signals and creates one or more backreflected signals, wherein the ~~one or more of the one or more~~ light sources directs the one or more backreflected signals toward the ~~one or more~~ long period Bragg gratings;

wherein the ~~one or more of the one or more~~ long period Bragg gratings attenuates the one or more backreflected signals to promote a reduction of oscillation of the one or more output signals.

20. (currently amended) A method, comprising the step of:

promoting a reduction of backreflection of ~~one or more~~ an output signals from ~~one or more~~ an amplification fibers of a broadband fiber source through employment of ~~one or more~~ a long period Bragg gratings that is optically spliced to the amplification fiber and a light source.

21. (currently amended) The method of claim 20, wherein the step of promoting ~~the reduction of backreflection of the one or more output signals from the one or more amplification fibers of the broadband fiber source through employment of the one or more long period Bragg gratings~~ comprises the step of:

attenuating ~~one or more of~~ the ~~one or more~~ output signals through employment of ~~one or more of~~ the ~~one or more~~ long period Bragg gratings.

22. (currently amended) The method of claim 21, wherein the ~~one or more~~ long period Bragg gratings comprises a first long period Bragg grating ~~and a second long period Bragg grating~~, the method further comprising the step of:

promoting a reduction of scale factor linearity error for a fiber optic gyroscope through employment of ~~the~~ a second long period Bragg grating that is optically spliced to the amplification fiber and the fiber optic gyroscope, wherein the fiber optic gyroscope employs one or more of the one or more output signals.

23. (currently amended) The method of claim 22, wherein the step of promoting the reduction of scale factor linearity error for the fiber optic gyroscope comprises the step of:

attenuating ~~one or more~~ a residual signals from ~~a~~ the light source before the residual signal reaches the fiber optic gyroscope ~~of the broadband fiber source~~.

24. (new) The apparatus of claim 1, wherein the first and second optical splices comprise fusion splices.

25. (new) The apparatus of claim 4, wherein the first, second, third, and fourth optical splices comprise fusion splices.